

# The Cryogenic Impact Resistant Evaluation of Composite Materials for Use in Composite Pressure Vessels with an Additional Cryogenic Bonding Scope, Phase II

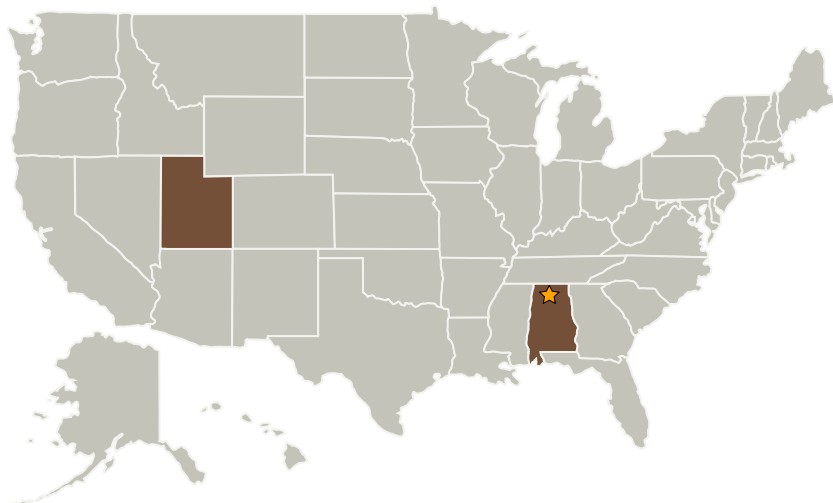
Completed Technology Project (2007 - 2009)



## Project Introduction

The intent of the proposed effort is to investigate the detailed composite material performance characteristics after being subjected to cryogenic temperatures and impact damage. HyPerComp Engineering, Inc. (HEI) and Utah State University (USU) further propose to correlate these characteristics to composite overwrapped pressure vessels (COPVs) and demonstrate the correlation through actual COPV testing. This will result in a safer, more reliable design for high performance COPVs in a cryogenic environment. HEI and USU also propose to study the cryogenic bond necessary between composites and aluminum for thin walled aluminum lined COPVs to prevent the buckling of the aluminum during depressurization. This intent will be demonstrated by actual pressure vessel testing.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Marshall Space Flight Center (MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
HyPerComp Engineering, Inc.	Supporting Organization	Industry	Brigham City, Utah



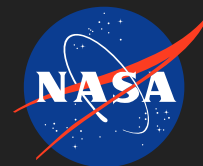
The Cryogenic Impact Resistant Evaluation of Composite Materials for Use in Composite Pressure Vessels with an Additional Cryogenic Bonding Scope, Phase II

## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	2
Project Management	2
Technology Areas	2

# The Cryogenic Impact Resistant Evaluation of Composite Materials for Use in Composite Pressure Vessels with an Additional Cryogenic Bonding Scope, Phase II

Completed Technology Project (2007 - 2009)



## Primary U.S. Work Locations

Alabama

Utah

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Marshall Space Flight Center (MSFC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

Carlos Torrez

## Technology Areas

### Primary:

- TX14 Thermal Management Systems
  - └ TX14.1 Cryogenic Systems
    - └ TX14.1.1 In-space Propellant Storage & Utilization